

Study Guide

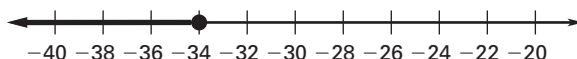
For use with pages 143–148

GOAL Solve inequalities using multiplication or division.**EXAMPLE 1** Solving an Inequality Using MultiplicationSolve $\frac{y}{17} \leq -2$. Graph your solution.

$$\frac{y}{17} \leq -2 \quad \text{Write original inequality.}$$

$$17 \cdot \frac{y}{17} \leq 17(-2) \quad \text{Multiply each side by 17.}$$

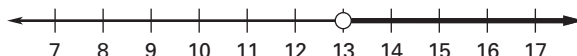
$$y \leq -34 \quad \text{Simplify.}$$

Answer: The solution is $y \leq -34$.**EXAMPLE 2** Solving an Inequality Using DivisionSolve $-8x < -104$. Graph your solution.

$$-8x < -104 \quad \text{Write original inequality.}$$

$$\frac{-8x}{-8} > \frac{-104}{-8} \quad \text{Divide each side by } -8. \text{ Reverse inequality symbol.}$$

$$x > 13 \quad \text{Simplify.}$$

Answer: The solution is $x > 13$.**Exercises for Examples 1 and 2**

Solve the inequality. Graph your solution.

1. $\frac{h}{6} < -4$

2. $5u > -35$

3. $-7y \geq -63$

4. $18 \geq \frac{x}{-3}$

LESSON

3.5

Continued

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EXAMPLE 3 Writing and Solving an Inequality

If you are at-bat 250 times this baseball season, how many hits must you get to have a batting average of at least 0.452?

Solution

Let h represent the number of hits. Write a verbal model.

Hits	\geq	Target batting average
At-bats		

$$\frac{h}{250} \geq 0.452 \quad \text{Substitute.}$$

$$250 \cdot \frac{h}{250} \geq 250 \cdot 0.452 \quad \text{Multiply each side by 250.}$$

$$h \geq 113 \quad \text{Simplify.}$$

Answer: You have to get at least 113 hits to achieve a batting average of at least 0.452.

Exercise for Example 3

5. You earn \$6 per hour at your after-school job. How many hours must you work this week to earn at least \$72?